MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2015/2016

PCA0150 – COMPUTER APPLICATIONS

(Foundation in Information Technology/ Foundation in Law)

16 OCTOBER 2015
9.00 a.m. – 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of **FOUR** pages (excluding the cover page).

2. Answer **FIVE** out of **SIX** questions. Marks will be given for the first five questions answered.

3. Write your answers in the Answer Booklet.

Instructions: Answer **FIVE** questions only. Write your answers in the Answer Booklet.

QUESTION 1 [10 Marks]

Sally wants to withdraw some money via Automated Teller Machine (ATM) in campus. ATM is a computerized machine that enables customers to perform several banking operations without assistance from bank representatives. In order to proceed with the transaction, she need to have the ATM card and provide certain information as the input for the ATM.

a. What is the difference between input and input devices?

(2 marks)

b. Identify **TWO (2)** input devices and **TWO (2)** output devices provided by the ATM.

(2 marks)

c. Suggest and briefly explain a suitable network architecture for ATM. Draw the suggested architecture to support your answer.

(3 marks)

d. All ATMs around the world are based on the concept of centralized database system to ensure that the valuable information is well kept and maintained for customer accessibility. List and briefly explain **TWO (2)** characteristics of valuable information.

(3 marks)

QUESTION 2 [10 Marks]

Alex is assigned to create a simple online registration system for outdoor club in his college. The system must be capable to store, maintain and print member's personal information for reporting purposes.

a. Printer is one of the output device required by this system. Name and briefly explain **TWO (2)** different types of printer available for Alex to propose to the club.

(3 marks)

b. Alex is still considering whether to buy an ink-jet printer or the laser printer for the system. How these two printers form characters and images as the printout?

(2 marks)

c. This system will include a database to store all personal information of their members. List **THREE (3)** advantages of using the database approach.

(3 marks)

Continued...

d. Alex needs to ensure the system is free from any errors. Briefly explain the difference between logic error and syntax error that can be detected during the test solution stage in program development life cycle (PDLC).

(2 marks)

QUESTION 3 [10 Marks]

a. Processor is the most important component of a computer which is used to interpret and process basic instructions. Every instruction will be repeatedly processed through a machine cycle.

   i. Name **FOUR (4)** operations involved in a machine cycle.

(2 marks)

   ii. Generally, the processor chip generates heat which could cause the chip to burn. Identify **TWO (2)** techniques used to handle this problem.

(3 marks)

b. What is Object-oriented programming (OOP)? List **TWO (2)** benefits of OOP.

(3 marks)

c. Based on the picture given below, write the result of graphic compression using the lossless technique.

Legend:

	White
	Grey

i.

ii.

(2 marks)

QUESTION 4 [10 Marks]

a. Hard disk is an essential component for computer to store data, instructions, and information.

   i. How are hard disk and solid state drive different?

(2 marks)

   ii. List **TWO (2)** advantages and **ONE (1)** disadvantage of using solid state drive.

(3 marks)

Continued...

b. A multimedia application involves the use of multimedia technology for business, education and entertainment. Define the terms below:
   i. Web-based training
   ii. Computer-based training
   iii. Virtual Reality

(3 marks)

c. Match the computer communication activities on the left to the **CORRECT** network communication standards and protocols that enables these activities.

(2 marks)

i.	Sending email to friend	A.	Wi-Fi (Wireless Fidelity)
ii.	Using hot spots to access Internet	B.	WAP (Wireless Application Protocol), 4G, 3G
iii.	Using *smart tag* at the tollbooth	C.	TCP/IP (Transmission Control Protocol/ Internet Protocol)
iv.	Browsing Web sites using smartphone	D.	RFID (Radio Frequency Identification)

QUESTION 5 [10 Marks]

Lisa is the owner of a boutique at Melaka which offers the latest design on clothing and accessories. She wants to expand her business and promote her products using Web application. With this new application, the customers will be able to order products and do payment by using electronic funds transfer (EFT).

a. What is Web application? Identify **TWO (2)** benefits of using Web application.

(3 marks)

b. Suggest **TWO (2)** examples of application software for Lisa to create advertisements and edit images for her business.

(1 mark)

c. Lisa wants to use a dedicated line at her boutique to support the Web application for her business.
   i. Briefly explain to her the difference between dial-up lines and dedicated lines.

(2 marks)

   ii. Recommend **ONE (1)** dedicated line that is popular in Malaysia. Give **ONE (1)** example of the service to support your answer.

(1 mark)

d. Security is one of the most critical issue that Lisa has to consider especially when using Web application. Identify and briefly explain **TWO (2)** categories of cybercrimals that could be a threat to her business.

(3 marks)

Continued...

QUESTION 6 [10 Marks]

a. What is an operating system? List **THREE (3)** functions of an operating system.

(4 marks)

b. Hardware theft and vandalism are common computer crimes that occur throughout the world.

    i. Identify the differences between these two crimes.

(2 marks)

    ii. Suggest **TWO (2)** safeguards that can be implemented to avoid these crimes.

(2 marks)

c. Most computers nowadays offer multi-core processors which consist of two or more separate core processors embedded in a single chip. Write **TWO (2)** advantages of using a multi-core processor.

(2 marks)

End of Paper